

CLAIMS

1. A method for producing optical films comprising the steps of:
melt-extruding a thermoplastic resin into a film through a die of an extruder,
pressing the melt-extruded thermoplastic resin layer together with a supporting layer between a cooling roll which is made of metal or ceramic and a rubber roll which is pressed against the cooling roll and rolled in the same circumferential direction,
carrying the thermoplastic resin layer together with the supporting layer under taking off tension until the thermoplastic resin layer is cooled down, and
peeling and separating the supporting layer from the thermoplastic resin layer to obtain a thermoplastic resin film.
2. The method for producing optical films according to claim 1, wherein the distance of a gap between the cooling roll and the rubber roll is set so as to be any value between 10% and 90% of the total thickness of the supporting layer and the film, and a stopper is installed on either the cooling roll or the rubber roll in such a way that these two rolls does not come within a distance of this value of each other, and the thermoplastic resin layer is pressed between the rolls by applying a pressing force of 2.7 to 10.0 kgf/cm to the roll on which the stopper is provided.
3. The method for producing the optical films according to claim 1 or 2, wherein the supporting layer is a synthetic resin film.
4. The method for producing optical films according to any one of claims 1 to 3, wherein the rubber roll is a roll in which a rubber-like material having

a surface hardness of 60 or more is wound around a metal core in a thickness of 5 to 15 mm.

5. The method for producing optical films according to any one of claims 1 to 4, wherein the thermoplastic resin layer is pressed through the supporting layer between rolls by arranging the supporting layer on the side contacting with a rubber roll.

6. The method for producing optical films according to any one of claims 1 to 4, wherein the thermoplastic resin layer is pressed through the supporting layers between rolls by arranging the supporting layers on one side contacting with a rubber roll and on the other side the supporting layer contacting with a cooling roll.

7. The method for producing optical films according to any one of claims 1 to 6, wherein the thermoplastic resin is a cyclic polyolefin resin.

8. The method for producing optical films according to any one of claims 1 to 7, wherein the supporting layer comprises a biaxially oriented polyethylene terephthalate.

9. The method for producing optical films according to any one of claims 1 to 8, wherein optical films obtained by the method for producing according to any one of claims 1 to 8 have the smoothness of 0.01 μm or less in terms of an average roughness Ra and a birefringence of 30 nm or less in terms of retardation.

10. The method for producing according to any one of claims 1 to 8, wherein optical films have a retardation of 20 nm or less, and the streaks or the pattern of tints are not substantially visually recognized when transmitted light of light impinged at an angle of 45 degrees to a film is

projected on a vertical plane.